

# PATENT SPECIFICATION



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COMPLETE SPECIFICATION.

21. Juli 1932

## Production of Artificial Waves in Swimming Pools and the like.

We, **BAMAG-MEQUIN AKTIENGESSELLSCHAFT**, a Company organised and existing under the laws of Germany, of 10-17, Reuchlinstrasse, Berlin, N.W. 87, Germany, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

10 This invention relates to a method and apparatus for the production of waves in swimming pools and the like, and consists in elevating water from the pool or the like into a chamber by rarefying the air 15 in the chamber by means of a pump and then admitting air to the chamber to destroy said rarefaction and allow the elevated water to fall freely.

The invention not only dispenses with 20 all the inconveniences of wear and attention attaching to a mechanical forcing or driving system and the considerable idling and power losses inseparably connected therewith, but also 25 effects a considerable saving in power, or, alternatively, enables a far more powerful wave movement to be produced, for a given consumption of power, than in the case of the methods already known.

30 The manner in which the new method operates is represented in the accompanying drawing, in which:—

Fig. 1 is a cross section through the operative portion of the apparatus, and

35 Fig. 2 is a plan on a smaller scale.

In the illustrated embodiment there is mounted on the rear wall 1 of the tank or pool 2, a flat box 3 which projects a certain vertical distance (for example 1-2 40 metres) above the normal level 4 of the contents of the tank or pool. As shown in fig. 2, this box can be divided into two or more compartments by partitions 5, each compartment being closed at the top except for an opening 7 adapted to be closed by a valve 6. In addition, each compartment is connected, at the top, to the suction pipe 8 of a pump 9. At the 45 bottom, each compartment of the box 3 communicates with the tank or pool through an opening 12, and, in this portion, the rear wall of the box is curved in accordance with the occurrent curva-

ture of the flow.

Each valve 6 is suspended on a crank 55 10 in such a manner, in the example shown, that the valve closes when the crank reaches its upper dead point. The shaft of the crank 10 is rotated, through a reduction gear, by a motor 11. 60

The method of operating is as follows: The air pump runs continuously. When the valve 6 of a compartment of the box 3 is closed, liquid is consequently drawn 65 from the tank or pool 2 into that compartment by suction. A device of any convenient kind (especially an electrical switch-off and on device) is arranged in such a manner that, when the compartment has become filled with the liquid, 70 the motor 11 is set running and the valve 6 is opened. A special type of control consists in using an adjustable time switch which is set in accordance with the periodicity of the wave motion, as ascer- 75 tained by experience.

In consequence of the outside air being now admitted, the mass of water in the compartment is released and rushes down- 80 wards, producing the desired undulation of the contents of the tank or pool on issuing from the opening 12 provided at the bottom of the compartment. On the reflux of the waves towards the compartment 3, the kinetic energy of the water forces it part way up into the compart- 85 ment, and at that moment the switch mechanism energises the motor 11 for closing the valve 6, the suction of the pump causing the water to rise still higher in the compartment, until the release 90 energises the motor to open the valve again operates and the cycle is repeated.

Obviously the compartments of the box 3 may be operated simultaneously or 95 alternately.

Having now particularly described and ascertained the nature of our said inven- 100 tion and in what manner the same is to be performed, we declare that what we claim is:—

1. A method of producing waves in swimming pools and the like, consisting in elevating water from the pool or the like into a chamber by rarefying the air 105 in the chamber by means of a pump and

then admitting air to the chamber to destroy the rarefaction and allow the elevated water to fall freely.

2. A method according to claim 1, characterised in that the air pump is run continuously, and the periodical simultaneous, or alternating, filling and emptying of compartments in the box is effected by automatically switching on and off a motor controlling the or each valve.

3. Apparatus for carrying out the method claimed in claim 2, characterised in that the control of the motor is effected

by a time switch which is set in accordance with the wave-periodicity ascertained by experiment.

4. Apparatus for producing waves in swimming pools and the like substantially as described with reference to the accompanying drawing.

Dated this 23rd day of November, 1931.

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54, Hope Street, Glasgow.

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*[This Drawing is a reproduction of the Original on a reduced scale.]*

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Fig. 1

Fig. 2

